CDPR Discussion Paper 2001

Presented at
WIDER DEVELOPMENT CONFERENCE:

Debt Relief

17-18 August 2001, Marina Congress Centre, Helsinki

Session 1.2 (Nordia Room)
11:00-12:00
Friday 17 August

How much poverty could HIPC reduce?

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Date of draft:
7 August 2001

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Abstract

This paper reviews the development of the HIPC Initiative, then considers how much poverty could be reduced through debt relief. Using a simple distribution function and measures of inequality, US one dollar a day poverty is estimated for the twenty-three countries. We show that the HIPC countries account for relatively little of developing country poverty. Further, full debt cancellation would have a small impact on reducing poverty in most of the HIPC countries themselves. The paper reaches the conclusion that neither a distribution-neutral debt cancellation, nor transferring all debt payments to investment for faster growth would achieve the International Poverty Targets. Therefore, debt relief must be combined with redistribution measures to achieve those targets.

Introduction

The HIPC Initiative began in the mid-1990s as a scheme to reduce the debts of qualifying low-income countries. Over time poverty reduction emerged as a key element in the programme. This paper considers the extent to which HIPC debate relief would reduce poverty, and in particular, its contribution to meeting the International Poverty Target of a fifty percent reduction by 2015.

The first section of the paper reviews the main aspects of the HIPC programme, and argues that on the face of it, the poverty impact seems rather small. From this we conclude that debt cancellation would be a more sensible policy. In the following section detailed calculations are made to estimate the decline in poverty in each HIPC country that might be fostered by debt cancellation. Our conclusion is that even debt cancellation would make relatively little contribution to achieving the international target for 2015. This leads us to advocate redistribution as the only practical policy to achieve the poverty goals.

A Review of the HIPC Initiative

The Highly Indebted Poor Country (HIPC) initiative launched by the IMF and the World Bank in 1996 has quite a history behind it. As early as the beginning of the 1980s some argued that the accumulation of debt in many third world economies was increasing at alarming levels.[1] Only after the meeting of G7 countries in Toronto in 1988, did heavy indebtedness among some of these countries gain international recognition. It took another eight years after the Toronto meeting for the international donor community to formulate an integrated proposal for action and a further two to three years to activate it.

The mechanism eventually created for countries to qualify for and benefit from the HIPC initiative involved a complex web of criteria, conditions and phases. Under the first HIPC initiative the criteria for eligibility consisted of three elements. Countries are required to:

a) be eligible for concessional assistance from 'IDA-only',[2]
b) have their indebtedness at an 'unsustainable' level which cannot be remedied by traditional debt-relief mechanisms,[3] and
c) implement 'sustained' economic reform and poverty reduction programs approved by the IMF and the World Bank.

On the basis of these criteria, forty-one countries might qualify for debt relief under the original HIPC framework.[4] From the outset, the original HIPC initiative was

[1] Easterly (1999) and Hanlon (2000) have pointed out that a considerable part of the debt stock of today's heavily indebted economies started to accumulate in the 1970s, although they offer substantially different arguments on the causes of the debt accumulation.
[2] Their per capita income level is required to be $900 or lower
[3] The thresholds for debt sustainability are well known. Therefore we do not repeat them here. For details see, UNDP (1999), IMF & IDA (1999).
[4] Angola, Benin, Bolivia, Burkina Faso, Burundi, Cameroon, Central African Republic, Chad, Congo DR, Congo R, Côte d'Ivoire, Ethiopia, the Gambia, Ghana, Guinea, Guinea-Bissau, Guyana, Honduras, Kenya, Lao PDR, Liberia, Madagascar, Malawi, Mali, Mauritania, Mozambique, Myanmar, Nicaragua, Niger, Rwanda, Sierra Leone, São Tomé Príncipe, Senegal, Somalia, Sudan, Tanzania, Togo, Uganda, Vietnam, Yemen, Zambia. Overall 33 African, 4 Latin American and 4 Asian Countries. Among these, Angola, Kenya, Vietnam and Yemen are expected to achieve debt sustainability after receiving debt relief under traditional mechanisms (e.g. through Paris Club or other bilateral agreements). Although Lao PDR in many HIPC related documents is indicated not to be seeking for debt relief under HIPC initiative, in the 'HIPC Initiative Country Implementation Status Notes' of 11 May 2001, it is indicated that the country has reached a new three-year PRGF arrangement and I-PRSP with the IMF and the Bank and that the authorities in the country '…are still in the process of studying the advantages and the disadvantages of requesting HIPC relief…' .

criticised by a wide range of organisations including UNDP, Oxfam, Christian Aid, Drop the Debt, Jubilee 2000, Eurodad and Cafod. Among them a consensus has emerged on three major aspects of HIPC.

First, the original HIPC initiative offered *too little to too few and too late*. The most important factors for this were the criteria for debt sustainability and the conditionality accompanying debt relief. The thresholds for debt sustainability were especially problematic. In the view of Oxfam (1999a), the export-based thresholds came from the experience of debt relief and scheduling processes of the early 1980s for middle-income Latin American economies. It would be unlikely that the same criteria would be appropriate for the HIPC economies. The absence of a clear and analytical justification for these thresholds for low-income countries suggested a degree of arbitrariness in their selection. High thresholds acted to limit the size of debt relief, as well as restrict the number of countries that might qualify.

The prolonged negotiations among multilateral and bilateral donors and the efforts to create an integrated debt-reduction mechanism significantly delayed the delivery of debt relief. 'Policy conditionality' generated further lags in the process. In addition to delays associated with eligibility and qualification,[5] so-called slippages in implementation of economic reforms created further postponements and hindered many countries in reaching their decision points. For example, delays for Nicaragua were attributed to slippages in the Poverty Reduction and Growth Facility (PRGF) program. Similar problems were expected for the Gambia.[6] Program implementation in Côte d'Ivoire was found 'off-track' in 2000. Therefore, the decision point for this country was postponed to the last quarter of 2001.[7] The sluggish progression as a result of policy conditionality worsened due to the large the number of conditions included in these programs. [8]

Second, the HIPC lacked an explicit linkage with human development and poverty reduction. To correct this, alternative proposals to HIPC made by UNDP, Eurodad,

[5] Countries were expected to implement policies of poverty reduction and growth facility (PRGF) and poverty reduction strategy for three years after qualifying for debt relief. Towards the end of that period, they would reach the 'decision point' when they were considered for a Paris Club 'stock-of debt operation'. At this point it would be decided if debt sustainability would be achieved at the 'completion point' (three years after the decision point). If not, additional debt relief would be provided.

[6] See, 'HIPC Initiative Country Implementation Status Notes' prepared by the staffs of the IMF and the World Bank, September 2000.

[7] See, 'HIPC Initiative Country Implementation Status Notes' prepared by the staffs of the IMF and the World Bank, September 2000 and May 2001.

[8] For example, Tanzania had 157 policy conditions in its I-PRSP while Benin had 111 (UNESCO 2001).

Oxfam, Cafod, and other organisations. These proposals stressed the need for a closer link between debt relief and social development indicators: poverty levels and human development indicators on education and health. Creation of mechanisms to direct resources released by debt relief into social expenditure, especially poverty reduction, was seen by these organisations as vital for the effectiveness of debt relief.[9] Thus, what began as a limited debt reduction scheme increasingly took on the role of a poverty-reduction programme.

Third, the initiative was not supported by resources adequate to fulfil its promises. Generation of sufficient resources for HIPC initiative has been closely linked to the differing degrees of political support from donor countries. While the UK and the Nordic countries strongly supported substantial debt reduction and cancellation from the outset, others, especially Germany, Japan and Italy remained lukewarm. In the late 1990s, the reluctance of the latter group, notably that of Germany, reversed in favour of 'deeper and earlier debt relief'.

Modification to the original HIPC initiative came in 1999 as a result of increasing pressures from debt-campaign groups. The debt sustainability criterion, under the so-called 'enhanced HIPC initiative', was re-redefined.[10] The stages in the debt relief process were also slightly modified. The three years of policy implementation after reaching the decision point was reduced to 'at least' a full one-year contingent on a Poverty Reduction and Growth Facility (PRGF) and a Poverty Reduction Strategy Programme (PRSP) before reaching the completion point.

As of June 2001, five years after the initiation of HIPC, only two countries, Uganda and Bolivia, reached their completion points under the enhanced framework. Twenty-two countries reached the less arduous 'decision point'. In nominal terms, debt relief for these countries overtime was estimated to be about US$34 billion. This corresponds to US$20 billion reduction in net present value terms. As a result, external indebtedness of these countries would be reduced by two-thirds on average, while debt service would fall by

[9] UNDP, for instance, called for the creation of a 'National Partnership Facility', while Oxfam suggested that 'a human development window' should be opened within HIPC debt relief process to facilitate the transfer of resources for poverty reduction and social development purposes. Cafod argued for 'feasible net revenue approach' in estimating debt sustainability levels. The approach involves estimating debt relief after deducting minimum levels of expenditure on human development sectors (education, health etc.) from relevant sums.

[10] Accordingly, external debt-export ratio is reduced to 150 per cent and debt service-export ratio to 15-20 per cent on a net present value basis. For very open economies with 30 per cent or more export to GDP ratio, a lower external debt to export ratio is accepted if the fiscal revenue to GDP ratio is more than 15 per cent.

one-third after HIPC relief and relief by other mechanisms. Average relief generated was estimated to be around 1.2 per cent of HIPC GDPs (World Bank, 2001). It should be obvious that this level of debt relief would have little impact on either growth or poverty reduction (see discussion below).

Details of estimated debt relief by countries is shown in the two parts of Table 1. Five more heavily indebted economies were expected to reach their completion point by the end of 2001.[11] For the remaining sixteen, the process was still uncertain in mid-2001, although the likely completion points, according to the World Bank and the IMF, would be 2002. Looking at the data on the distribution of debt relief in Table 1b among the decision point countries prompts two comments. First, there was a concentration in the distribution of debt relief in absolute value. Four countries, Nicaragua, Zambia, Tanzania and Mozambique, account for approximately fifty per cent of the total relief in net present value terms. Second, in relative terms the shares of Guinea-Bissau, São Tomé & Príncipe, Zambia and Guyana were larger when measured on the basis of total savings accruing to each country as a percentage of their national output.

The availability of resources remained a major concern under the enhanced HIPC initiative. Although all of the G7 countries promised to cancel one hundred percent of the bilateral debt owed to them, their contributions to HIPC Trust Fund, which finances multilateral HIPC relief, remained inadequate and less than pledges. Thus, the concerns were justified given that the multilateral component accounted for fifty per cent of the debt relief under HIPC initiative. In 1999 in Cologne, members of the G7 group agreed to provide substantial debt relief for twenty countries by 2000. Nevertheless, only some relief was provided for less than half of the countries targeted (see UNESCO 2001).

The HIPC Relief and Poverty Reduction

A casual search on the HIPC on the Internet produces around twenty thousand hit-marks. Of the issues debated and discussed in relation to HIPC initiative, perhaps the most controversial was its impact on poverty. When assessing the significance of HIPC relief for poverty reduction, one should consider its poverty reducing potential within the

[11] Benin, Burkina Faso, Guyana, Mozambique and Tanzania

context of the overall poverty levels in the developing world. More specifically, one may wish to see the contribution of HIPC initiative to the DAC target of halving the poverty levels in the developing world by 2015. Given the notoriously infrequent, imprecise and limited data on poverty in developing economies, this investigation requires a degree of speculation. Before considering the issue for the HIPC countries alone, we can see from Table 2 that these countries account for a quite small part of world poverty.

Table 2 (in two parts) provides an insight to poverty reduction. Using World Bank data for total developing world poverty[12] and our estimates in the next section for the HIPC countries, the latter accounted for four to six per cent of the total poverty in the developing world in the 1990s when poverty is measured on the basis of purchasing power parity (PPP) terms.[13] In constant US dollar terms, nine to twelve per cent of the developing world poverty was in HIPC countries. Both measures are used in our calculations in the next section of poverty levels by country. Whatever measure is used, the contribution of the HIPC initiative to the international poverty reduction goal is small even if we assume that the initiative succeeds in halving poverty in these countries. We show below that HIPC would fail to achieve even this.

The low global impact on poverty is not an argument against the initiative, if HIPC were an essential part of the exit from high levels of poverty, which it may be for many countries, especially those in the sub-Saharan. There, according to our PPP based estimates, a large portion of the population live below one dollar-a-day poverty line. The data on illiteracy rate, under-nourishment, mortality rate and access to sanitation (Table 3) complements our poverty data in reflecting the level of human deprivation in these countries; a third of the population is under-nourished, almost half illiterate, half has no access to adequate sanitation facilities, and under five mortality rate is 26 times higher than in high income countries.

Assessing the poverty reduction impact of the HIPC initiative on the qualifying countries is fraught with difficulties. Two broad factors are responsible for the complexity and difficulty. The first involves debt relief as such and its impact on poverty reduction. The time period over which the relief would be realised is not certain for some countries,

[12] These are estimates by Chen and Ravallion in the World Development Report 2000-2001.

[13] The measure of per capita income is usually regarded as more appropriate for cross-country comparisons than exchange rate converted measures.

as the policy implementations must satisfy the World Bank and the IMF.[14] Further, debt relief need not imply release of resources for poverty reduction and other social goals, even if governments wish to do this. In the cases in which countries did not fulfil their debt service obligations fully before HIPC relief, resources released by HIPC will be limited. Some governments must borrow in order to maintain their debt services. For such countries HIPC debt relief will reduce the borrowing requirement but not free resources for poverty reduction.

Secondly, the relationship between HIPC debt relief and poverty reduction should be considered in a dynamic context. There are many factors that need consideration for a proper analysis. Mechanisms of poverty reduction, through public spending, subsidies or employment generating projects, must be specified. Some forms of public spending, on education and infrastructure, might not have an immediate effect on poverty levels, but require a gestation period before taking effect. Accounting for this possibility would make estimations even more complicated. Also, general economic performance and a government's policy framework should be taken into account to assess the sustainability of poverty reduction from HIPC debt relief. For these reasons, our estimates of potential HIPC poverty reduction take quite simple and straightforward scenarios.

Prior to a fully-fledged analysis, one can gain an intuitive understanding of its potential for poverty reduction. Consider the following questions: 1) what is the relationship between the distribution of HIPC relief and the level of poverty in each country; 2) what are the mechanisms for poverty reduction and to what extent will resources released under HIPC be sufficient to sustain these mechanisms; and 3) assuming that the relief provided by the HIPC will have an indirect impact to reduce poverty, will that be sustainable at least in the medium term.

The answer to the first question is suggested by looking back at Table 1a and the Diagram 1. A comparison of the distribution of debt relief on a per capita basis and corresponding poverty shares of decision-point countries shows that the former does not correlate with the latter. Tanzania accounts for twenty per cent of the total poverty in the HIPC group, but receive ten times less debt relief in per capita terms than Guyana, whose poverty share is reported as tiny. This is hardly surprising given that the main aim of the initiative has been to bring HIPC economies to a point at which they can maintain debt

[14] It should be noted that there is a potential conflict of interest in the arrangement by which the World Bank and the IMF, who are the major HIPC creditors, deciding on whether governments qualify for debt relief from the same organisations.

servicing without further assistance. Indeed, in as far as the HIPC is a debt relief programme as such, there is no reason that it need be justified by its global poverty impact. After inspection it cannot be so justified.

The second question, the relationship between the mechanisms of poverty reduction and the resources released, leads to consideration of the poverty reduction strategy papers (PRSP) required of the governments of the HIPC countries. It is difficult to make a general evaluation of PRSPs, because there are great variations in the policies chosen to achieve the goals of growth and poverty reduction. Despite this, one can highlight elements are common to almost all PRSPs. PRSPs involve two sets of policies, that directly related to poverty reduction and that covering macro and meso policy. The macroeconomic framework in most PRSPs repeats many of the standard policies found in stabilisation and structural adjustment programs. Commitment to low inflation and fiscal deficit reduction as well as the familiar 'reforms' of privatisation, trade liberalisation, capital liberalisation, and public sector 'restructuring' are common to almost all PRSPs.[15] The policies in directly linked to poverty reduction are of three types, those fostering rural development[16], so-called institutional capacity building, and public expenditure.[17] Finally, all PRSPs without exception define social spending as poverty reducing.[18]

HIPC debt relief can operationally be linked to poverty reduction *via* social spending through the estimation of the expenditure facilitated by reducing debt, and comparing it to social needs. The simplest way to do this would be to choose a spending level that would allow a HIPC country to achieve a target poverty reduction, such as the International Poverty Target of fifty percent. One would then compare actual spending with this benchmark and compare the difference with the debt reduction generated from the country's HIPC agreement.

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[15] In some, target rates are set for each of these components. Some countries have identified specific sectors such as agriculture and tourism as drivers of growth and expressed an intention to focus on these sectors to achieve their targets. Goals like increasing investment and public savings are also encountered among other growth promoting channels.

[16] The justification for this commonality seems to lie within the fact that poverty in the Least Developed Economies is predominantly a rural phenomenon. Moreover, rural development policies are expected to have direct or indirect affects on agricultural productivity that would foster economic growth and poverty reducing efforts. Specifically, rural development policies include measures to create or reinforce rural financial systems (e.g. savings and credit co-operatives), maintain food security, increase agricultural productivity, provide technical assistance and training for farmers, fishers and agricultural workers.

[17] These reforms allegedly increase efficiency and improve management of public spending and debt, transparency and fiscal accountability, and reduce corruption.

[18] Included are expenditure on education, health and infrastructure (access to clean water, sanitation facilities, rural access roads, etc.). So-called prioritising is always emphasised.

Table 4 gives health and education spending for the decision point countries. These rates are compared with the spending levels for the same categories in the high-income countries. We assume that the share of social spending in GDP in high-income countries should be the minimum requirement for the HIPC group as far as the social spending component of the poverty reduction strategy is concerned. It might be argued that the high-income country percentages are much too high, given that those countries enjoy levels of education and health that HIPC countries could not achieve in decades. This argument is too narrow. If the international goal of dramatically reducing poverty will be achieved, it will be necessary for countries with high levels of poverty to spend at least as much on health and education proportionally as in countries where poverty is low.

The estimates in Table 4 show that the savings generated are sufficient to cover the difference for both education and health in five countries out of eighteen (excluding those without data). For the remaining thirteen countries, the savings are not even enough to cover the difference in health expenditure. Note that the data on savings to be generated through the HIPC debt relief reflects the total amount to be distributed over a period of time and that this time period is very long in many cases.[19] Therefore, the impact of HIPC relief on social spending is likely to be small.

This interpretation of the impact of HIPC relief does not generate an optimistic conclusion for poverty reduction. Perhaps more worrisome, it is not clear that HIPC debt reduction would achieve the more narrow goal of debt sustainability. Early projections by the World Bank and the International Monetary Fund indicate that the debt service levels will start to rise after 2003. For Honduras, Bolivia, Nicaragua, Niger, Uganda and Zambia debt service due in 2005 *after HIPC relief* would be higher than what was paid in 1999.[20] Some countries will pay more in the short-term than they did previously even with the full application of HIPC. The limitations of HIPC debt relief in ensuring long-term sustainability are acknowledged by both the IMF and Bank in a report published by the IMF and IDA (2001). The report points out that maintenance of debt sustainability dependents on countries achieving a higher growth path, which itself requires overcoming lack of diversification in exports and production, dependency on capital imports, declining terms of trade, and protectionism in the North.

[19] For instance, in the case of Bolivia, around 80 per cent of debt relief is projected to become effective in 15 years. See, PRSP for Bolivia (March, 2001).

[20] See World Bank (2001). Note, however, that their debt service-export ratio in 2005 is projected to remain under the threshold used for debt sustainability.

The relatively limited impact of HIPC suggests that the so-called international community would be better advised to cancel multilateral debts, just as several G7 countries have cancelled bilateral debts. This proposal has acquired the status of an international demand by non-governmental organisations, politicians and academics. Perhaps associated with the growing support for debt cancellation, one finds on the Internet a polemical[21] paper entitled, '100 Percent Debt Cancellation? A response from the World Bank and the IMF' (World Bank and IMF 2001). There might be sound reasons for not cancelling HIPC debts. These are to be found in the paper. While all contributions to the debate over debt relief should be considered on their merits, it is useful to invoke the principle of law that states that testimony that a person or organisation gives in its own self-interest carries less weight than testimony in which no obvious self-interest is involved.[22]

It is typically argued by the World Bank and the IMF that a write-off would undermine the ability to lend to the poorest countries. The capital base of the institutions would be reduced, and it is unlikely that governments of developed countries would increase their contributions to replace the debt cancellation. With the IBRD's equity leveraged at 'about 5:1',[23] 'its capacity to lend would be reduced by $5 for every $1 distributed to debt relief' (World Bank & IMF 2001, p. 5). In other words, a debt write-off for poor countries would be bad for poor countries. This is not a convincing argument. If it were, it would argue against any debt relief, or for as little as possible. More fundamentally, it is useful to speculate whether the financial constraints on debt cancellation would prove so serious were the World Bank and the IMF to publicly champion its cause. Were the leaders of those organisations to advocate debt

[21] The paper qualifies as polemics overall, and this is epitomised by the sentence 'Supporters of 100 percent debt cancellation must be honest about the costs' (p. 4). One does not have to take offence easily to interpret this sentence as suggesting that the unspecified 'supporters' had not, to the date of the paper, been honest, making it necessary to advise them to be so.

[22] The paper makes it clear that 100 percent debt relief would not be in the self-interest of the IMF: 'Debt cancellation would…impair the Fund's financial integrity'. A similar interest is stated for the World Bank: 'it is likely that the write-off would result in a weaker equity capital position for the Bank…' (p. 5).

[23] This is not a very compelling argument without more information. This leverage ratio is far less than for 'blue-chip' private banks, and it might be possible to increase the World Bank's leverage ratio without affecting its bond rating. The maximum loan level prior to cancellation can be defined as $L_0 = \alpha_0 E$. If the HIPC cancellation is equal to h, then the post-cancellation increase in the leverage ratio necessary such that $L_0 = L_1$ would be $\Delta\alpha/\alpha = \alpha^* = (1 - [L_0/L_0 - h])$, or one minus the inverse of the share of non-HIPC debt in total equity. It is possible that this percentage is quite high, so α^* is quite low.

cancellation, it is conceivable that the means to achieve it without reducing development lending could be found.

The basic arguments for debt cancellation are quite compelling. It would:

1. do the job properly, for if partial debt relief is good for HIPC countries, then cancelling the debt would be better;

2. avoid the delays, arbitrariness, and subjectivity associated with passing judgement on country qualifications for relief;[24] and

3. relieve the World Bank and the IMF of playing the role (like Santa Claus and the giving of presents) of deciding who has been good or bad, which has more than a hint of neo-colonialism in it.

Debt cancellation is neither radical nor dangerous, but sensible and uncomplicated. In the next section we use this sensible proposal as the benchmark for our estimates of the likely impact of debt relief on poverty reduction in the HIPC countries.

Estimates of Poverty Reduction from Debt Write-off

In this section we consider the poverty reduction in the HIPC scheduled countries that might be achieved were there a cancellation of all debt. Our procedure is to first estimate poverty levels for the twenty-three countries, then consider the effect of debt cancellation directly on poverty and on poverty via growth. While there are poverty estimates based on surveys for some of the HIPC countries, for our purpose they suffer from a number of deficiencies. First, surveys can be unreliable under the best of circumstances, since they suffer from sampling bias, are carried out at one point in time, and seek information that it is in the interest of the respondent to misrepresent.[25] Second, for the HIPC countries they do not provide a time series. Third, they frequently prove to be inconsistent with national accounts data (Weeks 1997). Since our exercise is to link poverty to per capita income, the latter is a serious problem.

[24] It is non-controversial that qualification is a process generating considerable delay. We discussed above the arbitrariness of the qualifying debt-ratios. Numerous studies have shown that there is limited consistency across countries in judging whether conditionalities are met. We would argue that this subjectivity is desirable, since each country's circumstances are different.

[25] For a discussion, see Karshenas (2001) and Sender (forthcoming).

In place of survey results, we follow Karshenas (2001) and estimate poverty levels on the basis of per capita income and a specific distribution function.[26] The function we chose is the Pareto distribution. This function has the well-known property of generating considerable inaccuracy at the extremes of the distribution. This problem does not affect our use of the function, since almost all the calculations fall within the middle percentiles. Using the function, the distribution of current income conforms to the following two-parameter function:

(1) $Y_i = Ah_i^{\alpha}$

Each country's distribution differs by the degree of inequality (the parameter α) and the scalar A, which is determined by overall per capita income. Thus,

(2) $A = \beta Y_{pc}$

and

(3) $Y_i = \beta Y_{pc} h_i^{\alpha}$

Total income is, by definition,

(4) $Z = m\sum \beta Y_{pc} h_i^{\alpha}$ for 1 = 1,2...100, defined across percentiles.

If the poverty line is $Y_p = P$, we can solve for the percentile in which it falls, which is also the percentage in poverty (N).[27]

(5) $h_p = N = [P/\beta Y_{pc}]^{(1/\alpha)}$

We use the poverty line adopted in the International Poverty Targets, of one US dollar per day. With P established, the only unknown in the formula is the distribution parameter α. This parameter is estimated in each case from each country's Gini coefficient.[28] Table 5a provides the poverty estimates generated by this method, for 1990, 1995 and 1999.[29] The first column gives the Gini coefficient, columns two through four show per capita income in constant US dollars of 1995, and five through seven the

[26]Non-technically, the poverty estimation can be explained as follows. Consider the special case of a country with a per capita income of US$ 365 and a normal distribution around the mean. In this case, the poverty share would be fifty percent of the population. The more skewed the distribution, the greater the poverty share. The specifics of the skewedness are determined by the distribution function.

[27] A characteristic of this distribution function is that the two parameters, a and b, are not independent of each other. This characteristic does not affect our calculations in the next section, because we use the function only for the initial period's income. For more detail, see Dagdeviren, van der Hoeven and Weeks (2001).

[28] The Gini coefficient is a measure that can be calculated for any distribution function. For any value of the Gini there is a unique value for α.

implied level of poverty. In the penultimate column is the percentage point decrease in poverty associated with a one percent increase in per capita income, and the final column reports the elasticity of the poverty share with respect to per capita income.[30] The absolute value of the elasticity of poverty with respect to per capita income varies negatively the degree of inequality, verifying the generalisation that initial inequality is a constraint on poverty reduction through growth.[31] For example, Madagascar and Rwanda have almost the same per capita income, but poverty is more growth elastic in the latter because of its much lower inequality. Table 5b repeats the same exercise using the purchasing power parity (PPP) measure of per capita income. The across-the-board higher per capita incomes have little impact on the elasticity of poverty with respect to growth, though they result in lower poverty declines for a one percent rise in per capita income due to the algebra of calculation.

Table 6 provides the information to assess the question, would debt relief have a substantial impact on poverty in the HIPC countries. For quick reference, the Gini coefficients are included along with the per capita incomes and implied poverty levels. Column four gives actual debt service paid as a proportion of national income, averaged over 1995-1999. The last two columns require brief explanation. External debt service reduces the national income distributed to the population, on the reasonable assumption that residents are not among the external creditors of the country. If a country's debt were completely cancelled, income to persons would rise by an amount equal to debt service, assuming none was taxed or went to undistributed profits. We assume that the 'debt bonus' from cancellation accrues proportionately across all income groups. That is, debt cancellation is treated as equivalent to a one-off distribution-neutral growth rate equal to the share of debt service in national income. The appropriateness of this assumption of a distribution-neutral debt bonus will vary by country, but it provides an instructive benchmark to assessing the impact of debt on poverty. As in Table 5, we report both the absolute percentage point decline in poverty and the percentage fall in the share (both expressed as a positive number).

One first notes that for all countries the percentage reduction in poverty is far less than the fifty percent set by the International Poverty Targets. For only one country,

[29] In an annex these estimates are compared to those proposed by others.

[30] That is, the percentage change in the poverty share is divided by the percentage change in per capita income, 1990-1999.

[31] There is a rather perverse exception to this. For countries with very low per capita incomes, greater inequality reduces poverty by bringing some of the population above the poverty line.

Zambia, is the reduction in the poverty share greater than ten percent, and for eight of the twenty-three countries the decline is less than two percent (less than three percent for thirteen of the twenty-three). There is a marked difference between the African countries and those in Latin American and the Caribbean (LAC). Of the nineteen African countries, only four have debt bonus poverty declines greater than the LAC country with the smallest decrease (Honduras). For some countries the limited impact of the debt bonus on poverty results from an unequal distribution of income. For example, Rwanda with debt service of only 1.3 percent of national income, achieves a slightly higher debt reduction than Malawi with 4.9 of national income. The general conclusion one can draw from Table 6 is that debt relief alone, even full debt cancellation would have a limited impact on reducing poverty in the HIPC countries, unless the debt bonus were distributed to those below the poverty line.

Tables 7 and 8 take a different but complementary approach to the issue of debt and poverty. Table 8 takes the International Poverty target for 2015 for each country, income per head in 1995, and calculates the poverty reduction that would be achieved with various rates of per capita growth. The table reports the per capita income that would reduce poverty to the target level and the required growth rate to reach this income per head. The calculations are based on per capita income measured in 1995 US dollars, but the growth rates change only marginally if the purchasing power parity measure is used. The table shows that for per capita growth rates up to four percent per annum (much higher than for any of the twenty-three countries except Guyana, Mozambique and Uganda), for only one country is the share of poverty reduced by half by 2015. It comes as no surprise that the country achieving the target, Rwanda, has the lowest degree of inequality by far. Its Gini coefficient was 28.9, compared to 34.7 for the next lowest, Chad. If somehow all of the HIPC countries grew at the 'Asian Miracle' rate of four percent per capita, the average short fall in poverty reduction (compared to the target) would be eleven percentage points across African countries and ten percentage points for the four LAC countries.

The analysis of growth rates and poverty reduction is elaborated in Table 8, which analyses the likelihood of the countries achieving the target rates of per capita growth. The first column reports the average growth rate for each country, 1990-1999, and compares it to the target rate (column 2), yielding the 'growth gap' in column three. The growth gap is quite daunting: across the African countries, actual growth during the 1990s was over seven percentage points below the rate that need be achieved during

2000-2015 to reduce poverty by half. For only three of the nineteen countries are the gap less than five percentage points. For the LAC countries the gap is slightly lower, six percentage points.

The remaining columns calculate the rate of investment in national income that would be necessary to generate the target rate of growth. This is done by applying the simple Harrod-Domar equation. The net investment rate is estimated as follows: 1) by assuming values for the marginal capital-output ratio; and 2) by assuming an arbitrary value for the average life of a homogeneous unit of capital (see notes to Table 8). The assumed capital-output ratios are well below the observed values,[32] but represent values that one would expect from countries at the level of development of the HIPC group. In effect, we assume that via demand management or some unspecified efficiency gain typically attributed to 'economic reform', capital is employed close to its optimal rate.

Defining our symbols:

y = rate of growth of GDP,

s_g = gross investment share in GDP,

s_n = net investment share in GDP,

d = share of depreciation in GDP,

k_i = average capital-output ratio (equal to the marginal),

p = rate of population growth

We can write,

$$y = [(s_g - d)/k]$$

$$y = (s_n)/k$$

If the rate of growth to achieve the poverty target is y^t, then the necessary rate of investment is:

$$s_n = k_i y^t$$

Columns five and six give the estimated net investment rates required to achieve the target rate of growth for the two values of the capital-output ratio, 2.5 and three for the African countries, and three and 3.5 for the LAC countries. These two columns are followed by the estimates of the 'actual' capital-output ratios for each country, based on

[32] Across the African countries, eliminating extreme values for Guinea-Bissau, Rwanda and Sao Tome & Principe, the 1995-1999 average capital output ratio was 2.9. The values range from a high of six (Zambia) to a low of 1.3 (Malawi). The 1995-1999 averages for the LAC countries are

1995-1999 averages. Column nine gives debt service as a percentage of GDP. We assume that all the countries benefit from a complete debt write off, and that the debt bonus is entirely applied to net capital formation. For example, Benin's net investment would go from 12.2 or 11.4 to 14.8 or 14 percent of GDP. The final two columns subtract the debt bonus augmented net investment share from the share required to reach the target rate of growth for the two capital-output ratios. The numbers in these columns we call the investment-GDP gap after the debt write off (with a negative number indicating an investment short fall). Of the twenty-three countries, only five would achieve the target rates of investment implied by fifty percent poverty reduction (with Nicaragua being a marginal case for a capital-output ratio of three). These cases are noted by black-bordered cells. The shaded cells indicate the countries for which debt relief makes the difference between achieving or not achieving the poverty target by 2015, of which there are four. These estimates demonstrate that debt relief, even a total debt write off, could not for most countries generate a rate of economic growth that would allow most HIPC countries to reach the international Poverty Target.

Our calculations allow us to reach two general conclusions:

1. if the debt bonus from cancellation of total debt were distributed to the population in a distribution-neutral manner, the resulting poverty reduction would be relatively minor; and

2. if the debt bonus from cancellation of total debt were used entirely for investment, the resulting growth gain would allow very few of the HIPC countries to achieve the rate of growth that would meet the poverty targets, even under the most optimistic assumptions.

The implication of these conclusions is that debt relief, especially partial debt relief, will be affective in reducing poverty if and only if it were combined with redistribution of the debt bonus and current income itself.[33]

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considerably higher than the 3-3.5 range, perhaps due to demand compression. The calculations are based on data from *World Development Indicators 2001*, using our depreciation assumption.

[33] For a detailed discussion of redistribution mechanisms, see Dagdeviren, van der Hoeven and Weeks (2001).

Conclusions

While the HIPC Initiative is a step in the right direction to foster sustainable growth in low-income countries, it is a limited step which will a relatively minor impact on poverty levels except in a few qualifying countries. However, there are practical and sensible policies of income and asset redistribution that could have a dramatic impact on poverty (Dagdeviren, van der Hoeven & Weeks 2001). At this point, after much delay in delivery of HIPC relief, and the inadequacy of that relief for poverty reduction, the time is over due to place policies of redistribution at the centre of the development agenda.

Annex: Comparison of Poverty Estimates

This annex compares the poverty estimates used in this paper to those of Karshenas (2001) and the World Bank, *World Development Report 2000/2001*. Since the estimating method in this paper is similar to that of Karshenas, it is not surprising that the two sets of estimates are correlated. Except for Benin and Senegal, the differences could be explained by technical factors: the distribution function used, the measure of per capita income, and the index of inequality applied.

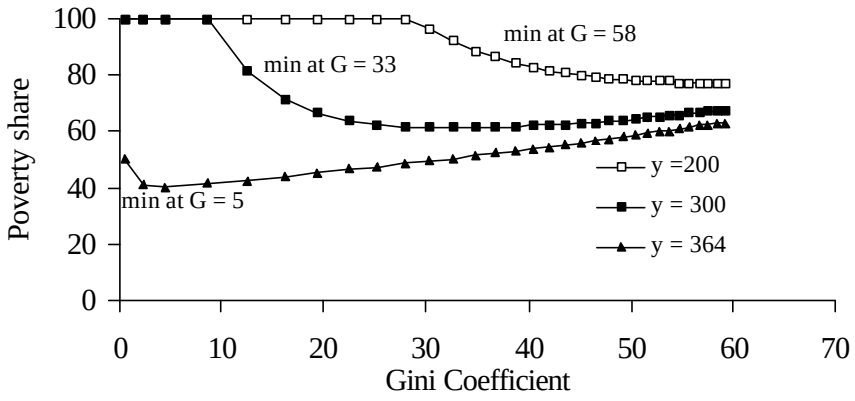
The World Bank estimates, based on surveys, are uncorrelated with either those in this paper or those of Karshenas. This implies that they are uncorrelated with per capita income, measured by constant 1995 prices or purchasing power parity. The Tanzania estimate is especially non-credible. If one uses constant prices (Table A1) and assumes a normal distribution,[34] fifty percent of the population had incomes below about US$ 180 in 1993, while the World Bank poverty estimate reports that only twenty percent of the population had incomes below US$ 365 a year. For the country's PPP per capita income, the World Bank estimate is technically possible, but would require a distribution of income more equal than any recorded for an African country.

As mentioned in the text, for any continuous distribution, the relationship between inequality and the poverty share is not monotonic if a country's per capita income is below US$ 366. This is demonstrated in Figure A1 for three per capita incomes, US$

200, 300 and 364. If one begins with an equal distribution, in which case everyone is below the poverty line, inequality initially reduces the share of poverty by transferring income form the poor to the less poor. As inequality increases, this perverse effect ends, and the turning point inequality is inversely related to per capita income. When using the PPP measure of per capita income, this anomaly does not arise, because none of the HIPC countries have PPP income per head below US$ 366.

Figure A1:

Share of Population in Poverty (US$ dollar day)
as a Function of Inequality



[34] This assumption yields the minimum percentage that lies below the mean, fifty percent.

Table A1: Comparison of Poverty Estimates for HIPC Countries

A1a. PCY (1995 US dollars - WDI)		Per capita income		Poverty Estimates HW		MK	WB
SSA Countries	Gini	1990	1995	1990	1995	1995	Various years
Benin	43.9	337	359	58.4	56.1	22.1	none
Bukina Faso	43.6	225	235	75.3	73.1	64.7	61.2
Cameroon	49.0	733	564	40.8	46.6	none	none
Chad	34.7	226	210	79.6	85.1	82.0	none
Gambia	43.4	345	339	57.2	57.8	35.9	53.7
Guinea	46.8	507	547	49.5	45.5	67.9	none
Guinea-Bissau	56.1	212	217	75.8	75.2	76.2	none
Madagascar	43.4	263	225	68.1	75.1	49.2	63.4
Malawi	62.0	146	142	85.3	86.0	70.3	none
Mali	50.5	251	251	70.3	70.3	72.1	none
Mauritania	38.9	412	436	50.6	48.8	34.0	72.8
Mozambique	43.9	144	151	99.0	96.1	44.8	37.9
Niger	36.1	229	200	77.6	87.2	75.2	61.4
Rwanda	28.9	290	202	64.4	**64.4**	63.2	35.7
SaoTome&Prin	43.9	325	303	59.2	62.1	none	none
Senegal	41.3	546	519	41.2	42.6	17.9	26.3
Tanzania	38.2	181	173	92.0	95.1	80.3	19.9
Uganda	39.2	246	297	71.9	62.4	48.8	none
Zambia	49.8	504	359	49.9	58.9	80.7	63.7
	40.7	322	302	66.6	67.8	58.0	
LA&C Countries							
Bolivia	42.0	832	902	31.5	29.8	none	29.7
Guyana	52.0	555	749	49.3	43.1	none	none
Honduras	53.0	682	700	45.9	45.2	none	40.5
Nicaragua	50.3	460	427	52.6	54.5	none	none
	49.3	632	695	44.8	43.1		

Notes:

See end of Table A2.

A2a. PCY (PPP 1995 prices - WDI)		Per capita income		Poverty Estimates HW		MK	
SSA countries							WB Various
Country	Gini	1990	1995	1990	1995	1995	Years
Benin	43.9	794	846	34.3	33.0	22.1	none
Bukina Faso	43.6	801	836	33.8	32.9	64.7	61.2
Cameroon	49.0	1878	1446	25.4	29.0	none	none
Chad	34.7	890	829	22.8	24.3	82.0	none
Gambia	43.4	1475	1451	22.9	23.1	35.9	53.7
Guinea	46.8	1618	1747	25.0	24.0	67.9	none
Guinea-Bissau	56.1	835	855	45.1	44.7	76.2	none
Madagascar	43.4	936	801	30.5	33.7	49.2	63.4
Malawi	62.0	564	546	57.2	57.7	70.3	none
Mali	50.5	676	678	43.8	43.8	72.1	none
Mauritania	38.9	1444	1527	18.6	17.9	34.0	72.8
Mozambique	43.9	626	658	39.7	38.5	44.8	37.9
Niger	36.1	843	736	25.3	28.4	75.2	61.4
Rwanda	28.9	1060	736	13.7	21.2	63.2	35.7
SaoTome&Prin	43.9	na	na	na	na	none	none
Senegal	41.3	1361	1292	21.9	22.7	17.9	26.3
Tanzania	38.2	493	472	41.8	43.3	80.3	19.9
Uganda	39.2	827	999	28.9	25.1	48.8	none
Zambia	49.8	1057	754	33.2	39.1	80.7	63.7
	40.7	1010	956	31.3	32.3	58.0	
LA&C countries							
Bolivia	42.0	1833	2202	18.5	16.4	none	29.7
Guyana	52.0	2753	3305	24.1	22.1	none	none
Honduras	53.0	2093	2426	28.3	26.5	none	40.5
Nicaragua	50.3	1782	2262	27.5	24.5	none	none
	49.3	2115	2549	24.6	22.4		

Notes:

World Bank estimates are for the following years: 1985 (Rwanda), 1993 (Tanzania), 1994 (Bukina Faso, Mauritania), 1995 (Niger, Senegal), 1996 (Honduras, Mozambique), 1997 (Madagascar, Bolivia), and

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Table 1a: Estimated Debt Relief under HIPC Initiative for Decision Point Countries

Country	HIPC Status	NPV of Total Debt Relief (US$ Mns)	Nominal Debt Service Relief (US$ Mns)	Total Savings Percent of GDP*
Benin	CP by 12/2001	265	460	1.2
Bolivia	CP in 06/2001	1302	2060	2.0
Burkino Faso	CP by 12/2001	398	700	1.4
Cameroon	floating	1260	2000	2.5
Chad	floating	157	260	…
The Gambia	floating	67	90	2.0
Guinea	floating	545	800	3.1
Guinea-Bissau	floating	416	790	12.8
Guyana	CP by 12/2001	585	1030	9.2
Honduras	floating	556	900	2.0
Madagascar	floating	814	1500	1.7
Malawi	floating	643	1000	3.0
Mali	floating	523	870	1.8
Mauritania	floating	622	1100	4.5
Mozambique	CP by 06/2001 ?	1970	4300	2.6
Nicaragua	floating	3267	4500	8.0
Niger	floating	521	900	2.4
Rwanda	floating	452	810	2.0
São Tomé Príncipe	floating	97	200	12.5
Senegal	floating	488	850	1.2
Tanzania	CP by 12/2001	2026	3000	1.3
Uganda (*)	CP in 05/2000	1003	1950	1.6
Zambia	floating	2499	3820	11.7
Total relief provided/committed		20663	34430	

Source: The World Bank & IMF
* World Bank (2001)
CP: Completion Point

Table 1b: Debt Relief Per Capita & Distribution, and Poverty Share Across HIPC Countries

Country	Per capita Debt Relief US$	Share in Total Debt Relief	Poverty Share (1999)
Benin	43.3	1.3	2.8
Bolivia	160.0	6.4	1.9
Burkina Faso	36.2	2.0	4.9
Cameroon	85.8	6.2	5.9
Chad	21.0	0.8	2.6
Gambia, The	53.6	0.3	0.4
Guinea	75.2	2.7	2.5
Guinea-Bissau	351.2	2.0	0.9
Guyana	683.5	2.9	0.3
Honduras	88.0	2.7	2.5
Madagascar	54.1	4.0	7.2
Malawi	59.6	3.2	9.0
Mali	49.4	2.6	6.5
Mauritania	239.4	3.1	0.6
Mozambique	113.9	9.7	8.3
Nicaragua	664.2	16.0	1.8
Niger	49.6	2.6	4.3
Rwanda	54.4	2.2	2.5
Senegal	52.6	2.4	2.9
Tanzania	61.5	9.9	19.7
Uganda	46.7	4.9	7.0
Zambia	252.9	12.3	5.6

Table 2:
Share of Decision-point HIPCs in the Developing World Poverty
(US$1 per day measure - percent)

Per capita income measured in:	1990	1996	1998
Constant US$	9.3	12.0	12.1
PPP terms	4.3	5.6	5.7

Poverty Reduction in the Developing World if Poverty is Halved in the HIPC economies
(percent)

	1990	1996	1998
Constant US$ terms	4.63	6.02	6.06
PPP terms	2.17	2.79	2.83

Note: Shares are estimated on the basis of our own estimates of poverty in the HIPCs. Total poverty in the developing World taken from World Development Report (2000-2001), p.23. PPP is purchasing power parity.

Table 3: Selected Social Indicators for Categories of Countries, late 1990s

Country categories	Illiteracy Rate (% of 15+) 1999	Under-nourishment (% of pop) 1996-1998	Mortality Rate* (under-5) 1997	Access to Sanitation (% of pop.) 1999
High income	1.4	[reportedly negligible]	6.0	100
Low income	38.2	30.3	120	54
HIPC average	44.4	32.0	155.9	51

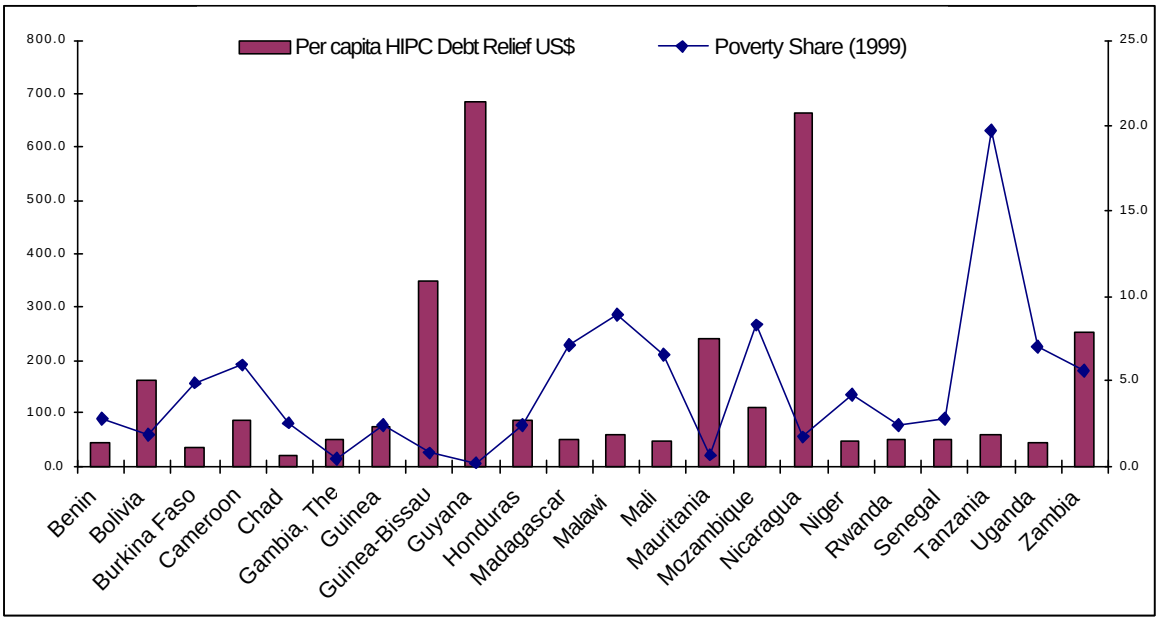
Source: *Human Development Report 2001* except for mortality rate.
*Taken from *World Development Indicator*s and defined as per 1000 live births.

Table 4: Spending on Education and Health in HIPC Countries, Late 1990s

Countries	Total Health Expenditure (% of GDP) 1998	Public Spending on education (% of GDP) 1995-1997*	Difference in spending between HIPC countries and High income countries: Health	Difference in spending between HIPC countries and High income countries: Education	Total Savings From HIPC Relief (% of GDP)
High income economies	8.6	5.4			…
Benin	3.2	3.2	-5.4	-2.2	1.2
Bolivia	6.5	4.9	-2.1	-0.5	2.0
Burkina Faso	3.9	3.6	-4.7	-1.8	1.4
Cameroon	…	2.9	…	-2.5	2.5
Chad	2.9	2.2	-5.7	-3.2	…
Gambia, The	3.8	4.9	-4.8	-0.5	2.0
Guinea	3.6	1.9	-5.0	-3.5	3.1
Guinea-Bissau	…	…	…	…	12.8
Guyana	5.3	5.0	-3.3	-0.4	9.2
Honduras	8.6	3.6	0.0	-1.8	2.0
Madagascar	2.1	1.9	-6.5	-3.5	1.7
Malawi	6.3	5.4	-2.3	0.0	3.0
Mali	4.3	2.2	-4.3	-3.2	1.8
Mauritania	4.8	5.1	-3.8	-0.3	4.5
Mozambique	3.5	…	-5.1	…	2.6
Nicaragua	12.2	3.9	3.6	-1.5	8.0
Niger	2.6	2.3	-6.0	-3.1	2.4
Rwanda	4.1	…	-4.5	…	2.0
Sao Tome and Principe	…	…	…	…	12.5
Senegal	4.5	3.7	-4.1	-1.7	1.2
Tanzania	3.1	…	-5.5	…	1.3
Uganda	6.0	2.6	-2.6	-2.8	1.6
Zambia	7.0	2.2	-1.6	-3.2	11.7

Source: Expenditure data from *Human Development Report* (2001).
Data in the final column is from World Bank (2001)
*The most recent estimate are used.

Diagram 1: HIPC Debt Reduction Per Capita and Poverty Shares, Across Countries



Poverty Share: Our estimates based on purchasing power parity.
Per capita HIPC Debt Relief is estimated by dividing total HIPC relief in NPV terms for each country to be disbursed or forgiven over a period of time through population. The former is the estimate of World Bank (2001) as of June 2001.